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Mr. Mackinnon's permutation lock; and an excellent street-door lock, as fixed on the front door of the Society's premises.

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No. VII.

A PLAN OF FORMING A FIXED BREAKWATER.

By J. JOHNSTON, Esq.

Dec. 13, 1843.

BENJAMIN BOND CABELL, ESQ. F.R.S. V.P. IN THE CHAIR.

*Abstract.*

THE plan is as follows. A series of distinct and separate caissons, each representing in external form one half of the pier of a bridge, with its cutwater presented to the sea, is to be formed in five to six-fathom water, according to any particular locality. Each caisson is to consist of cast-iron plates of large size, coated with coal-tar in order to prevent corrosion, and bolted together by means of four-inch flanges; the whole to be filled with concrete, granite, or other suitable material: the lower part of each caisson, to the height of thirty-two feet, having a foundation platform of wood, to be completed on shore, and, when prepared, to be launched and towed out to its destined position (as were the caissons of Westminster and Blackfriars' bridges), and then lowered into their final position: the whole to be secured to the bed of the sea by means of cast-iron piles, driven through tubes of the same material. As the upper part of the caisson is put together, so is the interior to be filled up with the solid materials: a coping of well-cramped masonry is to be fixed all round each caisson. The weight of each caisson complete would be about 4500 tons, and the cost of a break-

water on this principle, extending to nearly a mile in length, is estimated at 297,800*l*.

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NO. VIII.

THE PROGRESS AND PRESENT STATE OF THE  
DAGUERREOTYPE ART.

By M. CLAUDET.

THE discovery of a new art founded upon some startling facts in science, however perfect it may appear at the beginning, and little subject to improvement, rarely remains long stationary ; and still more rarely can we foresee all its useful applications.

As this observation applies particularly to the ingenious and curious discovery of Daguerre, it may be interesting at the present moment to examine the progress it has made during the last four years, and to determine its present state, in order that we may be able to compare, at given periods, the various stages of improvement through which photography has passed.

The daguerreotype has opened two extensive fields of inquiry : the one, for the investigation of facts, by which the sciences are to enrich themselves, and by which some of the phenomena of the laws of nature may be explained ; the other for the advantage of society, in reference to the creation of a new branch of manufacture, and to a new art, which are destined to give employment to many persons ; to which may be added the improvements that the daguerreotype will introduce in the fine arts.

It has been remarked that the discovery of photography was as great a step in the fine arts as that of the steam-engine in the mechanical arts. There is no exaggeration in this observation ; and certainly our age